G R S IX 5]

Previous references

Govt No. P.W. 952-90 of 16-9-19
1919.
P 3352-90 (Jul)

Later references

File No 180-19

Serial Nos. 1-5

GENERAL AND REVENUE SECRETARIAT

Serial Nos 1 to 5

Part B for Septr 1920.

SUBJECT

Water supply to Municipal Town

16/11/20

WD 788—G P B—5 000—7 11 19

G R. S III—1] 1917 6706 1

GENERAL AND REVENUE SECRETARIAT.

(Rel)

NOTES

File No 180-19

FILE HEADING

Water Supply to Kunigal Town

From

The Chief Engr in Mysore

No. B 9682 Dated 11-3-1920 Received 15-3-20

Diary No 675	En los 16 Spare Copies	Serial No 1

BRIEF ABSTRACT OF LETTER

Submits for administrative sanction a single estimate amounting to Rs 47,100 for water supply to Kunigal Town and states that the sum of Rs 25,376 given in the Report towards annual maintenance charges is under-estimated and that it will cost not less than Rs 30,000

NOTES AND ORDERS

This has to go in the first instance to the Deputy Commissioner Tumkur for obtaining the opinion of the Municipality regarding this scheme. Submitted with a draft for approval

Sd/- 15/3/1920

Sd/- [illegible] 1920

Sd/- [illegible] 1920

Notes—First Sheet

6706 (2
7378

G R S III-2]

General and Revenue Secretariat | Mel File No. 180 of 191 19

Serial No	
	To Mel D-C-Ramnad No 1103/19 dt 22-3-20
2	Forwards copy of letter from the Ch Engr together with its enclosures in original and requests him to obtain the opinion of the mel cl of Municipal Council in the matter of financing the water supply scheme for that town
	From
3	Mel D C-Ramnad No Mle 295/19 dt 20 & 21-4-1920
	Forwards copy of the proceedings of the mel cl of Kilakarai Municipal Council in the matter of financing the water supply scheme to that town
	3 The total estimated cost of the water supply scheme amounts to Rs 47100/. The municipal share of this scheme comes to Rs 23550/ The mel cl propose to finance their quota of the cost as follows
	Out of their surplus balance Rs 7000
	By borrowing from Govt or floating a loan in the open market Rs 17,000
	Rs 24000
	They also agree to pay the annual maintenance charges.
	The surplus funds at the credit of the mel account is Rs 10868/
	4 Submitted for orders

Vide flight

NOTE—Contn sheet

Mgh 14/4

General and Revenue Secretariat | File No. 80 of 1917

Serial No

5 The main project of the Kunnyal Town does not include the requirements of the Island town

6 The financial condition of the Kunnyal municipality stands as shown below as per the budget Estimates of the current year -

Normal Receipts - Rs 5675

" Expenditure - Rs 3974

Closing balance - Rs 7063

7 Under Rule 20 of the Municipal Manual, the closing balance should not be allowed to fall below 25 per cent of the annual Receipts The amount to be reserved under the circumstances comes up to Rs 1418/ The surplus available for the water project is only Rs 6064/- Hence the municipality will not be able to contribute Rs 7000 as proposed by them

8 The annual maintenance charges as per estimate come up to Rs 2060/- The Local Government in their proposal regarding have stated that they should be responsible for the maintenance charges will be met by them

Z

NOTE—Contn sheet

Serial No

Put up the approved programme of Water supply schemes of the current & next year —

24 4 20

The Programme for the next year has not as yet been prepared by D P W. It is however ascertained that the Kunnoth Water Supply scheme is included in the programme for 1920-21. Water Supply schemes to be undertaken during 1920-21 As regards the programme for the current year the D P W may be asked to put up a copy if necessary

Submitted with reference to para 11 of the Proceedings

12) Printed copy of the G O referred to above is not available hence a copy obtained from the office 13 Every Executive Officer will also be asked to send programme of water supply schemes for 1920-21 Ref para 9

Rev Secy

19-5-20

15 Administrative sanction may be accorded

2nd member & Dewan

21-5-20

P70

[G R S III-2]

7378 (5

General and Revenue Secretariat

File No. 151 of 1919

Serial No.

7191-138
25-5-920

It seems the desirable transfer has alone from the Military Dept of the Service to the Executive & the Govt Dam of to what their requirements are likely to be. In case the reply is in the affirmative the Estimate will have the revised by the P W D & the contribution from the Military Dept. both in actual & recurring - will have to be worked out & the acceptance of the Mily Dept obtained If the reply is in the negative then the question of administrative sanction may be considered It seems to me that the Estimate is rather heavy for a small Municipality like that of Bengal The maintenance charges are high & I do not know if the Municipality will be able to raise a loan locally to meet the initial expenditure in case a loan from Govt is not found to be convenient

Reel
28 5 20

I agree, action on the lines as suggested.

9 6 20

Submitted with a draft as directed at paras 16 and 17 ante

AN'S OFFICE.
ON MAY 30 1920
No. 7915

Draft
8
9/6/20

No.—Contn sheet

R. S III-2]

General and Revenue Secretariat

File No 180 of 1919

6706 78286 2006

Serial No.

20) Draft Sub for appl (Rev Secy)

8 19/6/20

Sd

7793-2&7 26 6 20

21) 2nd member

Sd 25-6-20

Sd

Sd 26/6/20

22) Sd 28/6/20

4 To

The Chief Commandant
No 347/98-7-1920

Inquires wherein the water service has to be extended to the Stud Farm (Kunigal)

5 From

The same officer
No 2453/3-9-1920

Informs that as a number of wells have already been sunk in the Stud Farm at Kunigal and that there seems to be no necessity for extending the water services to the Farm

23) Subd with refce to para 16 Supra for orders

Sd 7/9/20

Sd 9/9

NOTE—Contn sheet

G R S III-2]

General and Revenue Secretariat

nil File No. 280 of 1919

Serial No.

1744-32g
13 9-20

24 Secret Number

From the Collector of 3.9.20 it is clear that there is no need for an extension of the service to the Bustard. This means that no contribution that a recurring can be looked for from the Mily Dept I do not think that the financial condition of the Municipality with permit of the proposed levy undertaken for both the initial & the recurring charges are beyond its means. Recently I have expressed my views on the matter of the water supply to such municipalities and I think my suggestions have been passed on to the P.W.D. for consideration & receive proposals if possible. The result of this may I then be advised

OFFICE
15
60

Recd 14.9.20

25

16.9.20

26 This may be recorded and kept in file

Note—Contd sheet

No. 6706
15-3-20
No. B 9682

Mysore Public Works Department,
Central office
Dated Bangalore, 11th March 1920.

From

S. Cadambi, Esq.,
Chief Engineer of Mysore,
Bangalore.

Mt 180-19-1

180-19-1

To

B. Ramaswamiayya, Esq , B.A , B.L.,
Secretary to the Government of Mysore,
Revenue Department, Bangalore.

Sir,

With reference to item No.9 in the responsibility sheet of the Dewan's tour notes in the Tumkur, Hassan and Kadur Districts in January 1919, I have the honour to forward for favour of administrative sanction, the accompanying rough estimate amounting to Rs47,100 for water supply to the Kunigal Town

2. The reports of the Executive Engineer, Sanitary Division attached to the estimate explain the proposals.

3. The sum of Rs2,336 given in the report towards annual maintenance charges is under estimated, it will cost not less than Rs3,000.

I have the honour to be,
Sir,
Your most obedient servant,

For Chief Engineer of Mysore

J.R.10th.

G R. S VI—G/32]

SUBJECT

Diary No of letter replied to

GENERAL AND REVENUE SECRETARIAT,
( )
, the 191

Date of issue 22 3 20

Signed by Mr S V Ramachandran

Section ml
File No 180 19
Serial No 2

Encls as per list

No R 1103/19 22 3 20

To The D-e Secretariat

Sir,

In forwarding herewith a copy of letter no B 9682/811-3-20 from the Ch Engr together with its enclosures in original forwarding an estimate of Rs 4) 100/ for the Supply of water to the Kurnool town I am directed to request you to be so good as to obtain the opinion of the municipal Council of Kurnool in the matter of financing the scheme and submit the same to Govt at an early date

I have etc

for Secy to Govt

over

7378
3-4-20

Office of the Deputy Commissioner,
Tumkur District,
Dated Tumkur, the 9th April 1920

Ananda Rao Sirsi, Esquire, B.A., LL.B ,
Offg Deputy Commissioner, Tumkur District.

Ml 180-19—3

B Ramaswamiah, Esquire B.A , B L ,
Secretary to the Government of His Highness the
Maharaja of Mysore, Revenue Department, BANGALORE.

With reference to your No.R 11031/M1 180-19-2 dated 22nd
1920 regarding the water supply project of the Kunigal -
and the question of financing the scheme, I have the honour
ard herewith copy of the Proceedings of the Municipal
il as to its opinion in the matter received with President's
116 dated 3rd April 1920, for the information of the Govern-

The enclosures received with the above reference are all
ned herewith

I have the honour to be,
Sir,
Your most obedient servant,

for Offg Deputy Commissioner,
Tumkur District
absent from Head Quarters
CR

27613 1919-20

From

The Offg Deputy Commission
Tumkur District, T U M

To

The Secretary to the Gover
His Highness the Maharaja
Mysore, Revenue Depar
B A N G A O

Dated Tumkur, the 9th April

Despatched 10-4-20

Received

General No dlo & c 295/10-
No

Enclosure No 1 file
2

Re The wate Sup
of the Kunigal Town

*****

OFFICE OF THE DEPUTY COMMISSIONER,
JUNAGADH DISTRICT
7/4/20

83

No 116
19-20

12

Copy of letter No R 11031/M1 180-19-2 dated 22nd March 1920 13
from the Secretary to the Government of His Highness the Maharaja of Mysore, Revenue Department, to the Deputy Commissioner, Tumkur District

---

In forwarding herewith a copy of letter No B 9682 dated 11th March 1920 from the Chief Engineer together with its enclosures in original, forwarding an estimate of Rs 47 100, for the supply of water to the Kunigal Town I am directed to request you to be so good as to obtain the opinion of the Municipal Council of Kunigal in the matter of financing the scheme and submit the same to Government at an arly date

---

R 11932

Office of the Deputy Commissioner,
Tumkur District

smelbte 295/19-20

Dated Tumkur, the 25th March 1920

Memo

Copy forwarded with all its enclosures to the President of the Municipal Council Kunigal for submitting the opinion of the Council in the matter at an early date

91-

For Deputy Commissioner,
Tumkur District

Ksr.

25/3/20 Suggest this plan should before meeting

14

Letter No B. 9683 dated 11th March 1920 from the Chief Enigineer in Mysore to the Secretary to the Government of His Highness the Maharaja of Mysore, Revenue Department

---

With reference to item No 9 in the responsibility sheet of the Dewan's tour notes in the Tumkur, Hassan and Kadur Districts in January 1919, I have the honor to forward for favour of administrative sanction, the accompanying rough estimate amounting to Rs 47,100 for water supply to the Kunigal town

2 The reports of the Executive Engineer, Sanitary Division attached to the estimate explain the proposals

3 The sum of Rs 2,336 given in the report towards annual maintenance chanrges is under estimated, it will cost not less than Rs 3,000

"C o p y"

H V Ramaswamy
for Secretary to Government,
Revenue Department
mg 4

15

Enclosures to Chief Engineer's letter No.9680 dated the 11th March 1920.

KUNIGAL TOWN WATER SUPPLY.

Enclosures as per revised estimate.

General Abstract.

Comparative and General Abstract.

Calculation sheet.

Annual maintenance of working charges statement.

Discharge statement of distribution pipes with abstracts.

Report concerning two bore holes sunk behind Amanikere, Kunigal.

,9. 3 Tracing-plans and sections.

Enclosures as per old estimate of Rs 34830/-

Report.

Calculation sheet

Statement of annual maintenance.

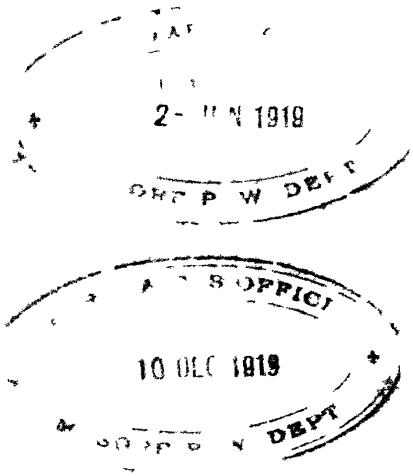
--do-- of discharge from distribution on pipes.

Abstract for the cost of distribution pipes

General Abstract

Tracing plan showing distribution.

Orderly bearer sent to C.E. c 295/19-20
for the President of the Kunigal Town
Improvement report - Re 116 of 3-4-20.
with the enclosures the hotel Bungalow



16 10

Sanitary Division Mysore P W D

Report to accompany the preliminary [redacted] for water supply to Kunigal --

Reference -

Superintending Engineer's No.2387/ S.355-19 dated 12-3-1919 forwarding an [redacted]tract from the Dewan's tour notes

R E P O R T

The preparation of this project - [redacted] undertaken in accordance with the -- [redacted]tes of the Dewan's tour during ----- [redacted]uary last

A project amounting to Rs 16,245/- [redacted] first investigated on the following lines:-

It was proposed to have a suction -- well in the bed of Kunigal Amanikere --- tank and to construct an impounding --- reservoir for storing water in it to -- induce percolation into the suction --- well The reservoir would be formed -- by bunding up a portion of the exist- ing Amanikere tank and it would have -- storage just enough to tide over one -- [redacted] of draught From the suction water would be pumped up by an oil --- engine to a service Reservoir [redacted] - tributed by a pipe line The [redacted] would be through taps and two bath tanks

3. This scheme was not accepted (1) the purpose of the [redacted]

7

Impounding Reservoir could as well be served by an infiltration gallery behind the tank itself, at much less cost.

(2) The provision of balancing -- tanks due to Service Reservoir not being situated sufficiently high would not -- work satisfactorily

4 Accordingly a fresh scheme has been worked out There will be an infiltration gallery of size 150'x 6'x 30' with a suction well at one end behind the -- Amanikere tank to catch all percolation and sub soil water from the tank As the quantity drawn off is only 5½ units for the whole year, this draught will -- hardly affect irrigation interest

From the suction well the water -- will be pumped to a service Reservoir -- elevated 20' above the ground and holding one day's supply.

The distribution of water supply will be by means of suitable cast iron main and 1" galvanized wrought iron --- pipes Water will be delivered at 9 -- fountains. If necessary, the number of taps may be increased by extra taps without much additional cost

5 The consumption allowed in this -- scheme is only 5 gallons per head per - day Greater provision cannot be allowed since the cost of the scheme would be too much for the Municipality to bear

bear 5 gallons are enough when used -- economically for domestic purposes only.

6 Munigal has at present a population of 4,527 and the scheme is prepared for a population of 5,000 The amount of -- the estimate is Rs 34,600/- and the annua maintenance charges amount to Rs 2336 The Municipality has now at their credit Rs 10,195/- Their present income and expenditure are Rs 7,643/- and Rs 5,131/- respectively If the Govern ment would bear half the cost of the project, the Municipality will have to borrow about Rs 7,000/- to meet the capital cost of -- the scheme ~~Accordingly~~ With the present revenue ~~alone~~ the Municipality can meet the annual maintenance charges and the interest on the borrowed amount ~~and clear off the loan in 30 years~~ If they can arrange to increase the Municipal -- revenue by Rs 500 they can clear off the debt -- in 30 yrs ~~further~~ ~~The project is evidently within the means of the municipality and -- therefore deserves to be sanctioned -- early.~~

This scheme does not include the requirements of the Civil Lines

Executive Engineer,
Sanitary Division.

Camp Shimoga,
15th May 1919

M J /3

Bengal Water Supply

Calculation Sheet 2

Present population - 4627

Prospective Population 5000

Quantity of water per head per day - 8 gallons.

" required per day - 25000 gallons.

Details of the Scheme-

1. An infiltration gallery behind the Annicut bund to catch all percolation and Sub soil water from the tank. Size of gallery assumed to be Sufficient for water Supply - 150' x 6' x 30' feet deep and Situated at I G. (vide Tracing plan)

2. To pump There from by means of an oil engine and Worthington duplex pumps to an Elevated reservoir holding 25000 gallons to be built at S.R. Service Reservoir (vide tracing plan) The Sill of S. R. will be 20' above ground level -

Calculation of H.P. of Engine -

If the required quantity per day is pumped in 8 hours discharge in gallons per minute = $\frac{25000}{8 \times 60} = 52$ gls.

R L. of Ground at S.R. = 190.00.

add 28' for elevation of Reservoir and head of water

R.L. of Top of Reservoir — 218.00

Water level of the Suction well. (174.00 - 20.00) = 154.00 -

P.T.

Static Head: 60 feet

Loss of head due to friction in 4" Pipe 10

According to the formula $\frac{H \cdot Q^2 L}{(3d)^5}$

Since length of Rising Main = 900 feet $\frac{52^2 \times 300}{(3\times 4)^5} = 3.3.6$ Say 4

Total head from all causes = 76 feet Say

Pump HP: $\frac{75 \times 52 \times 10}{38000} = 1.2$

The Engine Horse Power = 3.

Service Reservoir —

To hold 25000 gallons or 4000 cft

Assuming a depth of 8 feet.

Area of Reservoir = 500 Sft.

Or say 25' x 25'.

Distribution —

Vide Discharge Statement —

A. Macdonald
Executive Engineer
Sanitary Division

TBC

SECRETARY'S OFFICE
REGD NO
JUN 1918
DEPT

21

a/c water supply

Annual Maintenance Charges from

720	Oil Consumption per year at Rs 2 per month.	720
360	Lubricants waste etc Lump sum.	60
480	1 Driver on Rs 40 per month	480
120	1 Oiler and one fitter at Rs 10 per month	240
84	2 Cleaners at Rs 7 per month	84
	Depreciation on machinery and pipes at 2-½%	612
	Mg'. Total Charges. Rs	2336

Municipal income. Rs 7643.
expenditure Rs 5131

Closing Balance for the year.
ending 1917 18 Rs 10195

Executive Engineer
Sanitary Division

15-5-19

Public Works Department — Sanitary Division -1-

Discharge statement of Distribution pipes for the Water Supply to Kunnigal Town.

From	To	Distance in feet	Distance in yards	Dia. of pipe in inches	Discharge in Gallons per hour in Hydraulic gradient	R.L. of Ground level at junction	Loss of head due to friction	Reduced R.L. of Head	C.R.L. of ground	Effective Head	Remarks.
R.L.	a	730	243	4"	35	210.00	1 2	208 80	178 51	30 29	Tap No. 1 at a.
a.	b.	930	310	4"	31	208 80	1 2	207.60	178 46	29 14	
b	2	330	110	1"	4	207 60	7 24	200.36	178 79	21 57	Tap No. 2 at 2
b	3	588	196	3"	19	207.60	1.20	206 40	174 09	31 51	Tap No 3 at 3
3	4	607	202	2½"	15	206.40	1.90	204 50	180.40	24.10	Tap No. 4 @ 4
4	5	420	140	2"	11	24 50	2.18	202.32	181.01	21.26	Tap No. 5 @ 5
5	6	396	132	1"	4	202.32	8.8	193.52	176 18	17 34	Tap No 6 @ 6
5	7	495	165	1"	3	202 32	6 26	196 36			Tap No. 7 @ 7.
		Connecting pipe 1" from Tap No 7 to Junction 8								14 29' length.	
b.	8	510	170	2"	8	207 60	1 4	206 20	178 00	28 20	Tap No 8 @ 8.
8	9	718	239	3"	8	206.20	~~15 72~~ 15 72	~~190.34~~ 190.34	~~177.00~~ 177.00	~~13.34~~ 13.34	Tap No 9 @ 9. for Extension and future Extension

Abstract of length of pipes of Various diameters.

4"	3"	2½"	2"	1"
730	588	607	420	330
930	-	-	510	396
			718	495
				14 29
1660	588	607	1648	2650

(illegible)

11/5/19

11/5/19

"Signed" S. Rangaswami Executive Engineer.
Sub Asst Engineer — Sanitary Division.
Executive Engineer

Mysore P W Department — Sanitary Division

Abstract of Cost of the Distribution pipes for the water supply to Municipal Town.

Diameter of pipe in inches	Length of Pipe in feet	Weight per foot in	Total weight	Rate Rs	As	P	Cost	Total
½" (C I)	1660	Cwts 23 / Lbs	265 Lbs	Feet 16	8	-	4375	
¾" (C I)	588	1/9	65 33	Do.			1078	
1" (C I)	607	1/11	55 18	Do.			911	
1½" (C I)	693	1/14	50 10	Do.			1320	
2" (C I)	1678	1/14		Do.			3798	
" (Gun)	3360			Rft 1	2	-	2931	
			Total				16835	
add 10% for laying & jointing including Bend, Valves, and lead jointing							1685	
			Grand Total Rupees				18520	

Executive Engineer.
Sanitary Division

Sanitary Division

General Abstract for Water Supply to Kinugal Town

SDC RECD 10 DEC 1919

Sub Heads.	Per	Rate	₹	Cost	₹
Situation gallery behind tube well cleaning chamber					
Suction well complete. Size 150'x6'x3'	1			Rs. 6000	- -
3. H.P. oil engine and Ver Pump with accessories including Conveyance charges.				450	- -
Engine House.				750	- -
ation and erection of Engine & Pump				500	- -
Drivers Quarters				1000	- -
Elevated tank holding 25000					
½ of tank 20' above ground					
area 625 Sft (25'x25')	Sft	7 8 -	625	4687	- -
C.I Rising main 3"		3 4 -	900	292	- -
Distribution as per abstract				1253 +2300	- -
pipes with Connections	30	- -	9	270	- -
				3160	
	2	-			
Contingencies at 5%				1668	

38690 2

Checked 16/2/15 Seq

Executive Engineer
Sanitary Division

— Mysore P. W Department —

— Sanitary Division —

Rough Estimate of the water Supplying to Hunsgal town.

Amount of Estimate Rs 34,600/-

General Abstract of Cost for Water-Supply to Kurnool Town

No.	Particulars	per	Rate	Quantity	Cost	Total
1	Infiltration gallery behind Amani Kere, with clearing chambers, Suction well Etc Complete 20'×9'×30'	Pump	Sum	Rs	9000	
2	6 H P Gas Engine and pumps (Crossley Bros) with accessories, including Cost for delivery at Kurnool town	L	Sum	Rs	6000	
3	Engine House	L	Sum	Rs	1000	
4	Foundations and erection for Engine and pump	L	Sum	Rs	500	
5	Drivers Quarters	-	Do	-	1000	
6	Elevated tank holding 50000 gals Sill of tank 20' above Ground level. Area 1225 Sft or 35'×35'	Sft	7	8 0	1225	9188
7	C I Rising main 4" including Conveying, laying & lead Jointing	Rft	3	4 0	900	2925
8	Distribution as per abstract					13850
9	Stand pipes with Connections, platform, Etc complete -	Each	100	0	9	900
	Total					44363
	Contingencies at 5%					2217
	Grand Total				Rs	46580 46580

M Ramachandra Rao
Dy

M Anandarao
Executive Engineer
Sanitary Division

Mysore P W Department

Sanitary Division

Water-Supply to Kunigal Town

Estimate of the probable cost for Water Supply to Kunigal Town, Revised in the light of the proceedings of the Central Sanitary Board

4-8-1

Amount of Estimate Rs 45,530

Cyclostyled D

Sanitary Division

Comparative General Abstract between costs of Original and revised Estimates, for water Supply to Kunigal town.

Particulars	Estimate for Rs 34,830 Supply made at 5 gallons per head	Revised Estimate Supply 6 gallons per head	Remarks
Infiltration gallery with cleaning Chamber, Suction well, Etc Complete — Lump Sum.	6000	9000	
Engine and pump, for Complete delivery at Kunigal - Lump Sum.	4500	6000	
Engine House	750	1000	
Foundations and Erection for Engine and pump	500	500 1040	
Driver's Quarters	1000	1000	
Service Reservoir	4687	9188	
Rising main	2925	2925	
Distribution	12530	13850	
Stand pipes with Connections	270	900	
Total	33162	44363	44,857
Contingencies at 5%	1668	2217	2243
Grand Total	34830	46580	

V Mandelkay
Executive Engineer
Sanitary Division

7

en on sheet.

Present population ——— 4527 /

Prospective population —— 5000 /

antity of water allowed per head per day — 10 gallons

Do —— — required per day —— 50,000 gallons

etails the Scheme:—

1. An infiltration gallery behind the Amani Kere to catch all percolation and Subsoil water from the tank Size of gallery assumed to be Sufficient for the water supply is 200' (L) × 9' (B) × 30' deep, and is located at I G (Vide tracing plan)

2 To pump there from by means of a Crossley's Suction gas engine and pump, to an elevated tank, or Service Reservoir, holding one day's Supply, or 50000 gallons, to be lt at S.R (Vide tracing plan) The Sill of S R will be 20' above Ground level

3 En Required—

50000 gallons are proposed to be pumped in 8 hours charge required per minute in gallons = $\frac{50000}{8 \times 60} = \frac{625}{6} = 104$

R L of Ground at Reservoir position — 190 00

Add for Elevated of Reservoir and head of water 28 00

R L of water level in the reservoir — 218 00

P T O.

Water in Sump on well (174 00 – 20 00) = 54

Static head — 64.00

Loss of head due to friction in a 4" rising main 900' long, to discharge 104 gallons per minute is — $\frac{104^2 \times 300}{(12)^5}$ = 13.05 feet — 13 05

Add for other losses in Valves, bends, Etc — 7 95

Total head 85

Hence Pump H.P. Required is — $\frac{85 \times 104 \times 10}{33000} = 2$

or say — 3 H.P

The Engine H.P may be taken as 6 H

- Service Reservoir —

This should hold one day's supply or 5 with eight feet depth of water

Area required is — $\frac{500000 \times 4}{25 \times 8}$ = 1000 Sft

Or Say 35' × 35'

- Distribution — Vide discharge statement

J N Mandalsen
Executive Engr
Sanitary Divn

ab Rajkamal Kala Mandir
SO

Kumgal Town Water-Supply.

Annual maintenance Charges.

Fuel Consumption at 2 lbs per B.H.P per hour,
for 365 days ——— $\frac{365 \times 6 \times 8 \times 2}{112 \times 20} = 16$ tons nearly

Cost of fuel at Rs 40 per ton ——— 640 Rs.

Lubricants and waste at Rs 1-2-0 a day for one year } 412 Rs

1 Driver on Rs 40 a month for 12 months 480 Rs

1 Oiler and 1 fitter on Rs 10 each per month for 12 months } 240 Rs

1 Cleaner on Rs 7 a month — do — 84 Rs

Depreciation on machinery and pipes at 2½% as in margin ——— } 644 Rs

	Rs	
pipes	13850	1431-2-0
	2925	212-2-0
machinery	9000	644-2-0
Total	25775	Rs 1288-0-0

2½% of 25775 = 644 nearly.

Total charges ——— 2500 Rs

Municipal Income ——— Rs 7643

— do — Expenditure ——— Rs 5131

Closing balance for the year 1917-18 — Rs 10,195

M. Raghavendra Rao
S.O

Executive Engineer
Sanitary Division.
15-1-20

tment Sanitary Division.

Discharge statement of distribution pipes for the Water Supply to Kurnool Town.

From	To	Distance in feet	Distance in yards	Discharge in gallons per minute	Diameter of pipe in inches	R L of Calculated H-G-L line	Loss of head due to friction in pipe	Residual head	R L of Ground	Effective head	Remarks.
S R											
	a	730	243	69	5"	210 00	1 52	208 48	178 51	29 97	Tap 1
a	b	930	310	62	4"	208-48	4 80	203 68	178 46		
b	2	330	110	7	1½"	203 68	2 92	200 76	178 76	22 00	Tap 2
b	3	588	196	39	4"	203 68	4 20	202-48	174 89	27 59	Tap 3
3	4	607	202	32	3"	202 48	3 50	198 98	180 40	18 58	Tap 4
4	5	420	140	24	2"	198 98	4 13	194 85	181 06	13 79	Tap 5
5	6	396	132	8	1½"	194 85	4 58	190 27	176·18	14 09	Tap 6
5	7	495	165	8	1½"	194 85	5 73	189 12	171 59	17 53	Tap 7
7	8	1429'	G W I		1"	Connecting pipe					
b	8	510	170	16	2"	203 68	5 59	198 09	178 00	20 09	Tap 8
8	9	718	239	8	1½"	198 09	8 20	189-89	179·00	10·89	Tap 9
	No-	B-	Connection	to	Taps	are	1"	G. W.	I	pipe.	

Abstract for total lengths of pipes — and Cost of distribution —

5"	4"	3"	2"	1½"	1"
730	930	607	420	330	
	588		510	396	1429
				495	
				718	
730	1518	607	930	1939	1429

Lengths in feet	Diameters in inches	Weights per foot	Total weight	Rate	Cost	Total.
730	5"	2/9	162			
1518	4"	23 1/144	243			
607	3"	1/9	67			
930	2"	7/144	45			
	Total		517	16-8-0	8531	"
1939	1½"	G W I		1-0-0	1939	
1429	1"	- 80		0-12-0	1071	
			Total		11541	Rs
Add 20% for Valves, bends, Specials, Carriage and Land Pointing charges					2309	13850
				Grand Total	13850	

N B — The rates are provided for complete delivery at Kurnool town distribution plan same, as for old estimate for Rs 34830 Hordetun to please refer to that plan.

J N Mandlik Rao
Executive Engineer
Sanitary Division

N Raghavendra Rao Esq:

Report on the two boreholes sunk behind Amanikoro bund for investigating the yield of water for the water supply of Kunigal Town .

Two boreholes were put down behind the Kunigal Amanikoro tank at points A and B (vide Forro Map of Kunigal Town).

2. The first borehole which was put down at A went to a depth of 27 feet and the nature of materials passed through at different depths is denoted in the section herewith attached . The place was full of boulders and this site was first tried on account of its close proximity to the site of proposed service reservoir . Water was met with at 13 feet below ground and the soil in the sudde portion began to slip when the total depth was 27 feet. It was not possible to drive in the casing pipes to prevent this slip ing on account of the intermediate strata of rock so the work was stopped and the yield was test -ed by baling out the water by the hand pump at an average discharge of 150 gallons per hour The water level went down by 1½ feet after 1 hour of baling and further lowering of the water was not possible at this rate of discharge.

3. The second borehole was put down at point B and this site was free from boulders. The depth of the borehole

borehole is 34 foot and the nature of different soils met with is indicated in the section (vide enclosure). Water was met with 6 feet below ground and there is 28 foot of water in the borehole Rock was struck at 23 foot below ground and the borehole was deepened 11 foot through the rock. The work was stopped as nothing would be gained by going deep-er since the infiltration gallery will not go deeper than 30 foot. When the water was pumped out by the sand pump at 150 gallons per hour the water level was reduced by 1 foot after one hour and it was not possible to reduce the level any further. This extremely of recoupment is due to the water level in the tank at the time of operation being 8 feet higher than that in the borehole.

4. The site at the point B is quite suited for locating the infiltration gallery . The proposed size of the gal-lery is 150 foot by 6 foot and 30 feet deep as already estimated. The quantity of water for the water supply of Kunigal being only 25000 gallons a day , the depth of water to be recouped daily in the gallery is only $\frac{25000}{6\frac{1}{2} \times 150 \times 6}$ or $4\frac{1}{3}$ feet.

5. The ground level at site B, i.e. the site of infiltration gallery is 138.10 and the bed level of the gal-lery is 128.10. The general low bed level of the tank being 130.00 and the

and the depth of recoupment requir
-ed in the gallery being only 4½ feet,
it is quite reasonable to believe from
general experience that this much of
percolation can safely be expected from
such a large tank above it even when th
tank is dry for some time . The Scheme for
Water Supply already Submitted may there
fore be Sanctioned

H Stanley Jevons
Executive Engineer,
Sanitary Division

Dated 16-9-1919
Bangalore .

Big Map

The Chief Commandant in Mysore.

38

Sir,

I am directed to state that a project, at an estimated cost of Rs.47100 for the supply of drinking water to the Kunigal town, is under the consideration of Government As the requirements of the Stud Farm at Kunigal have not been taken into account in framing the estimate, I am directed to enquire whether the water service has to be extended to the Stud Farm also and if so what its requirements are likely to be. If the water service is to be extended to the Farm, the cost of the estimate will have to be raised, the Military Department being required to pay contribution towards both initial and recurring charges, which will be intimated to you after the figures are worked out, before the project is sanctioned

Mil 180-19-4

Recd 25 6 20

The favour of an early reply is requested.

I have the etc ,

25-6-20

88
19 6 20

Secretary to Government
Revenue Department

GKV

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No 2453

Bangalore 3rd Sept 1920.

D No 2006
6-9-20

From

The Chief Commandant,
Mysore State Troops, Bangalore

Ml 180-19-4

To

The Revenue Secretary
to Government of Mysore, Bangalore

Sir,

Adverting to your letter No R 347/M1 180-19-4 dated 8th July 1920, I have the honor to inform you that as a number of wells has already been sunk in the Govt Stud Farm at Kunigal for supplying water thereto, there seems to be no necessity for extending the water services to the Farm

I have the honor to be,
Sir,
Your most obedient servant,

B Chamarajendra

Lt Col S B
Chief Commandant,
Mysore State Troop